What is claimed is:

1. A radio frequency band reject filter comprising a shunt acoustic resonator and a series acoustic resonator, the shunt resonator being arranged to resonate generally at the reject frequency band and the series resonator being arranged to be anti-resonant generally at the reject frequency band.

2. A radio frequency filter according to claim 1, comprising a plurality of shunt acoustic resonators each arranged to resonate generally at the reject frequency band and a plurality of series acoustic resonators each arranged to anti-resonant generally at the reject frequency band, the shunt and series acoustic resonators being arranged in a ladder configuration.

3. A radio frequency band reject filter according to claim 1, wherein the shunt and series acoustic resonators are each formed as an array of a plurality of serially and parallel connected resonators.

4. A radio frequency filter according to claim 2, wherein the acoustic resonators are one port devices.

5. A radio frequency filter according to claim 2, wherein the acoustic resonators are surface acoustic wave resonators.

6. A radio frequency filter according to claim 2, wherein the acoustic resonators are thin film bulk acoustic resonators.

7. A radio frequency filter according to claim 2, further including a high Q matching network arranged to reduce the apparent capacitance of the filter outside the reject frequency band.

8. A base station power amplifier for a cellular radio network, the power amplifier including at least one inter-stage band reject filter comprising a shunt acoustic resonator and a series acoustic resonator, the shunt resonator being arranged to resonate generally at the reject frequency band and the series resonator being arranged to anti-resonant generally at the reject frequency band.

9. A power amplifier filter according to claim 8, wherein the acoustic resonators are one port devices.

10. A power amplifier according to claim 8, wherein the acoustic resonators are surface acoustic wave resonators.

11. A power amplifier filter according to claim 8, wherein the acoustic resonators are thin film bulk acoustic resonators.

12. A duplexer for a mobile telephone handset including an radio frequency band reject filter comprising a shunt acoustic resonator and a series acoustic resonator, the shunt resonator being arranged to resonate generally at the reject frequency band and the series resonator being arranged to anti-resonant generally at the reject frequency band.

13. A duplexer according to claim 12, wherein the acoustic resonators are one port devices.

14. A duplexer according to claim 12, wherein the acoustic resonators are surface acoustic wave resonators.

15. A duplexer according to claim 12, wherein the acoustic resonators are thin film bulk acoustic resonators

16. A low noise amplifier input stage including a band reject filter comprising a shunt acoustic resonator and a series acoustic resonator, the shunt resonator being arranged to resonate generally at the reject frequency band and the series resonator being arranged to anti-resonant generally at the reject frequency band.

17. An input stage according to claim 16, wherein the acoustic resonators are one port devices.

18. An input stage according to claim 16, wherein the acoustic resonators are surface acoustic wave resonators.

19. An input stage according to claim 16, wherein the acoustic resonators are thin film bulk acoustic resonators.

20. A filter according to claim 1, wherein at least one of the acoustic resonators is an inter-digital transducer type device having resonant fingers and wherein the fingers are non-parallel.

21. A filter according to claim 2, wherein the plurality of series resonators includes a plurality of SAW resonators formed on a common substrate, each SAW resonator sharing an input bus bar or output bus bar with an adjacent SAW resonators in the series.

22. A filter according to claim 2, wherein the plurality of shunt resonators includes a plurality of SAW transducers formed on a common substrate, each SAW transducer being coupled in series with the fingers of one transducer feeding via a transition zone into the fingers of the next transducer in series the transition zones each being formed as a plurality of nonparallel elongate conductors formed on the substrate and extending between the fingers of each successive transducer in the series, the first and last transducer in series being coupled to an input and output bus bar respectively.

23. A power amplifier according to claim 8 wherein the series acoustic resonator includes a plurality of SAW resonators formed on a common substrate, each SAW resonator sharing an input bus bar or output bus bar with an adjacent SAW resonators in the series.

24. A power amplifier according to claim 8, wherein the shunt resonator includes a plurality of SAW transducers formed on a common substrate, each SAW transducer being coupled in series with the fingers of one transducer feeding via a transition zone into the fingers of the next transducer in series the transition zones each being formed as a plurality of nonparallel elongate conductors formed on the substrate and extending between the fingers of

each successive transducer in the series, the first and last transducer in series being coupled to an input and output bus bar respectively.

25. A filter according to claim 8, wherein at least one of the acoustic resonators is an inter-digital transducer type device having resonant fingers and wherein the fingers are non-parallel.

26. A duplexer according to claim 12, wherein the shunt acoustic resonator includes a plurality of SAW resonators formed on a common substrate, each SAW resonator sharing an input bus bar or output bus bar with an adjacent SAW resonators in the series

27. A duplexer according to claim 12, wherein the shunt acoustic resonator includes a plurality of SAW transducers formed on a common substrate, each SAW transducer being coupled in series with the fingers of one transducer feeding via a transition zone into the fingers of the next transducer in series the transition zones each being formed as a plurality of nonparallel elongate conductors formed on the substrate and extending between the fingers of each successive transducer in the series, the first and last transducer in series being coupled to an input and output bus bar respectively.

28. A filter according to claim 12, wherein at least one of the acoustic resonators is an inter-digital transducer type device having resonant fingers and wherein the fingers are non-parallel.

29. A low noise amplifier input stage according to claim 16, wherein the shunt acoustic resonator includes a plurality of SAW resonators formed on a common substrate, each SAW resonator sharing an input bus bar or output bus bar with an adjacent SAW resonators in the series.

30. A low noise amplifier input stage according to claim 16, wherein the shunt acoustic resonator includes a plurality of SAW transducers formed on a common substrate, each SAW transducer being coupled in series with the fingers of one transducer feeding via a transition zone into the fingers of the next transducer in series the transition zones each being formed as a

plurality of nonparallel elongate conductors formed on the substrate and extending between the fingers of each successive transducer in the series, the first and last transducer in series being coupled to an input and output bus bar respectively.

31. A filter according to claim 16, wherein at least one of the acoustic resonators is an inter-digital transducer type device having resonant fingers and wherein the fingers are non-parallel.

32. A filter comprising a plurality of SAW resonators formed on a common substrate, each SAW resonator sharing an input bus bar or output bus bar with an adjacent SAW resonators in the series, whereby the transducers are electrically equivalent to a discreetly formed group of series-connected resonators.

33. A filter comprising a plurality of SAW transducers formed on a common substrate, each SAW transducer being coupled in series with the fingers of one transducer feeding via a transition zone into the fingers of the next transducer in series the transition zones each being formed as a plurality of nonparallel elongate conductors formed on the substrate and extending between the fingers of each successive transducer in the series, the first and last transducer in series being coupled to an input and output bus bar respectively, whereby the transducers are electrically equivalent to a discreetly formed group of shunt-connected resonators.